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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
GODBOLD, DOUGLAS	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/735,894	Applicant(s) KIM ET AL.	
	Examiner DOUGLAS C. GODBOLD	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6,9,12-15,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-3* is/are allowed.

6)☒ Claim(s) *6,9,12-15,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to correspondence filed September 13, 2010 in reference to application 10/735,894. Claims 1-3, 6, 9, 12-15, 18, and 19 are pending and have been examined.

Response to Amendment

2. The amendment filed September 13, 2010 has been accepted and considered in this office action. Claims 6, 9,12, 18,and 19 have been amended.

Response to Arguments

3. Applicant's arguments filed September 13, 2010 have been fully considered but they are not persuasive.

4. As an initial matter, it is noted that claims 18 and 19 were rejected in the previous application, although these claims were erroneously omitted from the heading.

5. Regarding applicant's augments, see Remarks pages 8-9, that Park does not teach or suggest the limitation of claims 6, 9, 18, and 19, the examiner respectfully disagrees. The examiner agrees, that Park differs from the claim limitations as amended, however believes that the claim limitations are an obvious variation on Park. For instance the claimed features of K samples coded by K-bit sized MSBs to LSBs vary only slightly from Parks system which codes 8 samples with two 4-bit MSB

symbols instead of an 8-bit MSB symbol. Because 2 4 bit symbols contain the same information as 1 8 bit symbol in the same number of total bits, the variations are obvious from one another that do not affect the functionality and thus would have been a matter of design choice. Because these features are obvious variations on each other, Park renders the claim language obvious.

Furthermore applicants content that Park does not teach or suggest differentially decoding information containing scale factor information. However it is the examiners position that Park teaches these limitations as laid out in the rejection below.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6, 9, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US Patent 6,438,525).

8. Consider 6, Park teaches a method for decoding audio data that is coded in a layered structure, with scalability, comprising:

using a processor for:

inputting audio signal and extracting audio data from said audio signal (figure 4, audio data input);

differential-decoding additional information containing scale factor information and coding model information based on scale band information and coding band information corresponding to a first layer (Col. 4, lines 37-48, wherein the quantization step size information is the scale factor information, and the quantization bit information is the coding model information. Also Col. 3, lines 18-21, describe the order of creation of the layers.);

Huffman-decoding audio data in groups of K quantized samples, (Col. 4, lines 37- 48 and 64-65, wherein the symbols are represented by bits (Col. 4, lines 49-50).);

inversely quantizing the obtained quantized samples by referring to the scale factor information (inverse quantizing portion 410 from Fig. 4 and Col. 13, lines 5-7);

inversely MDCT transforming the inversely quantized samples (frequency/time mapping portion 420 from Fig. 4 and Col. 13, lines 7-10. Note that Park does not specifically mention using the inverse MDCT in transforming the signal from frequency to the temporal domain, however it would have been inherent to one having ordinary skill in the art at the time the invention was made to have used the same process for decoding as for encoding but inversely, in which case the inventor used the MDCT transform for the time/frequency mapping portion for converting the data from the temporal domain into the frequency domain (Col. 10, lines 62-65, and Col. 13, lines 34-38).); and

repeatedly performing the steps with increasing the ordinal number of the layer one by one every time, until decoding for a predetermined plurality of layers is finished (Col. 13, lines 31-34),

wherein the Huffman-decoding of audio data comprises:

decoding audio data in units of symbols in consideration of bit range allowed in a plurality of layers corresponding to the audio data, in order from a symbol formed with MSB bits down to a symbol formed with LSB bits (Col. 13, lines 14-30, wherein the units of symbols are represented by bits. Column 9 lines 4-59 discuss that each of the layers have a different bit rates, and the bits are packed in a way to fit within this bit rate. Line 59 specifically refers to a "bit quality allowance"); and

obtaining quantized samples from a bit plane on which decoded symbols are arranged (Col. 13, lines 18-20, wherein Col. 7, lines 50-65 illustrate the arrangement of bits or bit plane used for the encoding, and Col. 8, lines 2-11 describe the arrangement of the bit patterns (symbols) for encoding.),

wherein in decoding audio data, a 4*K bit plane formed with decoded symbols is obtained, (Col. 13, lines 18-20, wherein Col. 7, lines 50-65 illustrate the arrangement of bits or bit plane (4*K) used for the encoding. For this example bit plane, the number of quantized samples (K) is 8, and the symbols are represented as bits.).

9. Consider claim 9, Park teaches an apparatus for decoding audio data that is coded in a layered structure, with scalability, comprising:

an unpacking unit which differentially decodes additional information containing scale factor information and coding model information based on scale band information and coding band information corresponding to a first layer, and by referring to the coding model information, Huffman-decodes audio data in groups of K quantized samples (bitstream analyzing portion 400 from Fig. 4, and Col. 4, lines 37-50 and lines 64-65, wherein the quantization step size information is the scale factor information, and the quantization bit information is the coding model information, also the units of symbols are represented by bits.);

an inverse quantization unit which inversely quantizes the obtained quantized samples by referring to the scale factor information (inverse quantizing portion 410 from Fig. 4, and Col. 4, lines 37-48); and

an inverse transformation unit which inverse-transforms the inversely quantized samples (frequency/time mapping portion 420 from Fig. 4, and Col. 4, lines 37-48),

wherein the unpacking unit decodes audio data in units of symbols in consideration of a bit range allowed in each of the plurality of layers corresponding to the audio data, in order from a symbol formed with MSB bits down to a symbol formed with LSB bits, and obtains quantized samples from a bit plane on which decoded symbols are arranged (Col. 12 line 67 to Col. 13 line 5, and Col. 13, lines 11- 20, wherein the units of symbols are the bitstreams which are composed of the bit sequences obtained from the bit plane as shown in Col. 7, lines 51-65. Column 9 lines 4-59 discuss that each of the layers have a different bit rates, and the bits are packed in

a way to fit within this bit rate. Line 59 specifically refers to a "bit quality allowance"), and

wherein the unpacking unit obtains a 4*K bit plane formed with decoded symbols (Col. 7, lines 49-65, 4*8 bit plane).

Park does not explicitly teach:

Huffman-decoding audio data in groups of K quantized samples, each group including k-bit sized symbols in order from a first symbol formed with MSB bits, symbol formed with MSB-1 bits down to a symbol formed with LSB bits and obtaining quantized samples by referring to the coding model information.

However, Park suggests:

Huffman-decoding audio data in groups of K quantized samples, each group including k-bit sized symbols in order from a first symbol formed with MSB bits, symbol formed with MSB-1 bits down to a symbol formed with LSB bits and obtaining quantized samples by referring to the coding model information (Col. 4, lines 37- 48 and 64-65, wherein the symbols are represented by bits (Col. 4, lines 49-50. The claimed features of K samples coded by K-bit sized MSBs to LSBs vary only slightly from Parks system which codes 8 samples with two 4-bit MSB symbols instead of an 8-bit MSB symbol.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use one 8bit symbol as would fit the claim language in the system of Park because 2 4 bit symbols contain the same information as 1 8 bit symbol in the same number of total bits, the variations are obvious from one another that do not affect the functionality and thus would have been a matter of design choice. There two variations

would have been obvious to try. Because these features are obvious variations on each other, Park renders the claim language obvious.

10. Consider claim 18, Park teaches a coding method comprising:

using at least one processor for;

inputting audio signal and extracting audio data from said audio signal (figure 4, audio data input);

slicing audio data so that sliced audio data corresponds to a plurality of layers (Col. 6, lines 6-12);

obtaining scale band information defining a scale factor for each of a plurality of scale frequency bands and coding band information defining a coding model for a plurality of coding frequency bands, the scale frequency bands and coding frequency bands corresponding to the plurality of layers (Col. 6, lines 1-6 and Col. 3, lines 39-42, wherein the quantization step size information is the scale factor information, and the quantization bit information is the coding model information); and

coding additional information containing scale factor information and coding model information based on scale band information and coding band information corresponding to a first layer (Col. 6, lines 1-6 and Col. 3, lines 39-42, wherein the quantization step size information is the scale factor information, and the quantization bit information is the coding model information);

obtaining quantized samples by quantizing audio data corresponding to the first layer with reference to the scale factor information (Col. 12, lines 15-19~ wherein the step size information is the scale factor information, and Col. 6, lines 21-36);

Huffman coding the obtained plurality of quantized samples in units of symbols in order from a symbol (Col. 6, lines 1-12, wherein the units of symbols are represented by the bit sequences, also Col. 11, lines 3-14 and Col. 3, lines 46-48); and

repeatedly performing the steps with increasing the ordinal number of the layers one by one every time, until coding for the plurality of layers is finished (Col. 6, lines 1-6).

Park does not explicitly teach:

Huffman-decoding audio data in groups of K quantized samples, each group including k-bit sized symbols in order from a first symbol formed with MSB bits, symbol formed with MSB-1 bits down to a symbol formed with LSB bits and obtaining quantized samples by referring to the coding model information.

However, Park suggests:

Huffman-decoding audio data in groups of K quantized samples, each group including k-bit sized symbols in order from a first symbol formed with MSB bits, symbol formed with MSB-1 bits down to a symbol formed with LSB bits and obtaining quantized samples by referring to the coding model information (Col. 4, lines 37- 48 and 64-65, wherein the symbols are represented by bits (Col. 4, lines 49-50. The claimed features of K samples coded by K-bit sized MSBs to LSBs vary only slightly from Parks system which codes 8 samples with two 4-bit MSB symbols instead of an 8-bit MSB symbol.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use one 8bit symbol as would fit the claim language in the system of Park because 2 4 bit symbols contain the same information as 1 8 bit symbol in the same number of total bits, the variations are obvious from one another that do not affect the functionality and thus would have been a matter of design choice. There two variations would have been obvious to try. Because these features are obvious variations on each other, Park renders the claim language obvious.

11. Consider claim 19, Park teaches a decoding method comprising:

using at least one processor for:

inputting audio signal and extracting audio data from said audio signal (figure 4, audio data input);

decoding additional information containing scale factor information defining a scale factor for each of a plurality of scale frequency bands and coding model information defining a coding model for a plurality of coding frequency bands, the scale frequency bands and coding frequency bands corresponding to each of plural layers (Col. 4, lines 37-48, wherein the quantization step size information is the scale factor information, and the quantization bit information is the coding model information. Also Col. 3, lines 18-21, describe the order of creation of the layers);

Huffman decoding audio data in units of (Col. 4, lines 37- 48 and 64-65, wherein the symbols are represented by bits (Col. 4, lines 49-50);

inversely MDCT transforming the inversely quantized samples (frequency/time mapping portion 420 from Fig. 4 and Col. 13, lines 7-10. Note that Park does not specifically mention using the inverse MDCT in transforming the signal from frequency to the temporal domain, however it would have been inherent to one having ordinary skill in the art at the time the invention was made to have used the same process for decoding as for encoding but inversely, in which case the inventor used the MDCT transform for the time/frequency mapping portion for converting the data from the temporal domain into the frequency domain (Col. 10, lines 62-65, and Col. 13, lines 34-38)); and

repeatedly performing the steps with increasing the ordinal number of the layer one by one every time, until decoding for a predetermined plurality of the plural layers is finished (Col. 13, lines 31-34).

Park does not explicitly teach:

Huffman-decoding audio data in groups of K quantized samples, each group including k-bit sized symbols in order from a first symbol formed with MSB bits, symbol formed with MSB-1 bits down to a symbol formed with LSB bits and obtaining quantized samples by referring to the coding model information.

However, Park suggests:

Huffman-decoding audio data in groups of K quantized samples, each group including k-bit sized symbols in order from a first symbol formed with MSB bits, symbol formed with MSB-1 bits down to a symbol formed with LSB bits and obtaining quantized samples by referring to the coding model information (Col. 4, lines 37- 48 and 64-65,

wherein the symbols are represented by bits (Col. 4, lines 49-50. The claimed features of K samples coded by K-bit sized MSBs to LSBs vary only slightly from Parks system which codes 8 samples with two 4-bit MSB symbols instead of an 8-bit MSB symbol.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use one 8bit symbol as would fit the claim language in the system of Park because 2 4 bit symbols contain the same information as 1 8 bit symbol in the same number of total bits, the variations are obvious from one another that do not affect the functionality and thus would have been a matter of design choice. There two variations would have been obvious to try. Because these features are obvious variations on each other, Park renders the claim language obvious.

Allowable Subject Matter

12. Claims 1-3 are allowed. The following is an examiner's statement of reasons for allowance:

13. The prior art of record, Park and Andrew, do to teach or suggest, alone or in combination, the limitations of "coding the K quantized samples in units of K-bit sized symbols in consideration of a bit range allowed in each of the plurality of layers corresponding to the samples in order from a symbol formed with MSB bits down to a symbol formed with LSB bits by obtaining a scalar value I corresponding to the symbol and performing Huffman-coding by referring to the K-bit binary data, the obtained scalar

value, and a scalar value corresponding to a symbol higher than a current symbol on the bit plane." When combined with the other limitations of the claim.

14. Claims 2 and 3 are dependent on and further limit claim 1 and therefore are allowable as well.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

15. Claim 12 contains similar allowable limitations as claim 1, and is therefore allowable as well.

16. Claims 13-15 are allowable as they are dependent on and further limit claim 12

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS C. GODBOLD whose telephone number is (571)270-1451. The examiner can normally be reached on Monday-Thursday 7:00am-4:30pm Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. C. G./

Examiner, Art Unit 2626

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626